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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,019	11/17/2003	Kenji Uchida	Q78599	9747
23373	7590	09/12/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			DINH, TUAN T	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 09/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/713,019	UCHIDA ET AL.	
	Examiner	Art Unit	
	Tuan T. Dinh	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6 and 8-12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7 and 13-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukuoka (U.S. Patent 5,949,654).

As to claim 1, Fukuoka discloses an electronic device as shown in figures 1-13 comprising:

an electronic component (102 or 202);

a metal substrate (110, a weld ring is made by metal, see column 11, lines 65-66) having a recess, see figure 2 large enough to fully receive the electronic component (102, 202); and

a wiring board (101 or 408-figure 13) having a surface area larger than the area of the opening of the recess and having a wiring pattern (408c-d-figure 13) formed on the top surface thereof, wherein

at least a portion of the surface of the wiring board is fixed to one of the top surface and the bottom surface of the metal substrate, and

wherein the electronic component (102, 202) is mechanically fixed to the bottom of the recess while being electrically connected to the wiring pattern (by a solder).

As to claim 2, Fukuoka discloses the wiring board (408) comprises another wiring pattern (408d) on the bottom surface thereof, and wherein the wiring pattern on the top surface of the wiring board is electrically connected to the wiring pattern on the bottom surface of the wiring board via (conductor filled in the through hole and make electrical connection on each of the layers) a contact formed through the wiring board (408).

As to claim 3, Fukuoka discloses the metal substrate (110) comprises a window that is opened from the bottom of the recess through to the bottom surface thereof, wherein the wiring board (101 or 408) is fixed to the bottom surface of the metal substrate (110) so that a portion of the wiring pattern is exposed in the recess through the window and wherein the electronic component (102, 202) is electrically connected to the wiring pattern exposed in the recess through the window using a bonding wire (210 or 411).

As to claim 4, Fukuoka further comprising a metal lid (103) fixed to close the opening of the recess, see column 12, lines 4-5.

As to claim 7, Fukuoka discloses the wiring board (408) is fixed to the metal substrate (413-figure 13) using one of diffusion bonding and fusion bonding, in which a surface treatment film made of gold, silver, tin, or a combination thereof is formed on each of a surface area of the wiring pattern and a surface area of the metal substrate to be bonded together and the surface treatment film of the wiring pattern and the surface treatment film of the metal substrate are formed into contact under a predetermined condition.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuoka in view of Sekine et al. (U.S. Patent 6,495,914).

Regarding claims 13-16, Fukuoka discloses all of the limitations of the claimed invention, except for the metal substrate having a metal outer frame and a metal bottom plate, the bottom plate for attaching the component and wider than the component.

Sekine et al. shows a MCM structure as shown in figure 4 comprising a metal substrate (41) having a metal outer frame (43) and a metal bottom plate (45), the bottom plate for attaching the component (47) and wider than the component.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have a teaching of Sekine et al. employed in the device of Fukuoka in order to reduce heat.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4, 7, and 13-16 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tuan Dinh', with a long, sweeping horizontal stroke extending to the right.

Tuan Dinh
August 25, 2006.